



UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,765	08/18/2003	Andrew B. Hastings	1376.725US1	3874
21186	7590	09/27/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH P.O. BOX 2938 MINNEAPOLIS, MN 55402-0938			MCLEAN MAYO, KIMBERLY N	
			ART UNIT	PAPER NUMBER

2187

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,765

Applicant(s)

HASTINGS, ANDREW B.

Examiner

Kimberly N. McLean-Mayo

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The enclosed detailed action is in response to the Application submitted on August 18, 2003.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 5-13 and 16-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolichtchak (PGPUB: US 2003/0014667).

Regarding claims 1-2, 10-13, 21-24, 27-29 and 32-35, Kolichtchak discloses a system comprising a memory (Figure 1, Reference 110); a plurality of pages held in the memory (section 0009); an instruction translation lookaside buffer (ITLB) (Figure 1, Reference 190); a first data translation lookaside buffer (DTLB) (Figure 1, Reference 180); a translation lookaside buffer [inherent; when a miss occurs in the ITLB, a miss handler [software/code] retrieves the entry from the page table and when a miss occurs in the DTLB a miss handler retrieves the missed page entry from the page table]; an executable/non-executable (x) indicator [user/supervisory mode] associated with each page in memory (Figure 2, bit 2; section 0011) wherein the TLB miss handler sets the x-indicator for a particular page to indicate non-executable when that page is accessed in a mode that allows writing to that page, and wherein the

Art Unit: 2187

ITLB refuses to allow instructions from a page with an associated x-indicator of non-executable to be loaded [section 0014].

Regarding claims 5, 9, 16 and 19, Kolichtchak discloses a read bit indicating that the page is valid and readable and a write bit indicating that the page is valid and writable (Figure 2, bit 2; section 0011).

Regarding claims 6, 8, 18, and 20, Kolichtchak discloses a write bit associated with each page in memory that indicates the respective page is writable (Figure 2, bit 1; section 0011)

Regarding claims 7 and 17, Kolichtchak discloses a page table used to translate a virtual address to a real address, wherein the x-indicator for each page is held in the page table entry associated with that page (Figure 2, bit 2; section 0011).

Regarding claims 25-26, 30-31 and 36, Kolichtchak discloses translating the address for the data access also including setting the non-executable indication for a page holding the data access address on if a write indication is set for that page (Figure 3, Reference 310).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolichtchak (PGPUB: US 2003/0014667).

Regarding claims 3-4 and 14-15, Kolichtchak does not disclose utilizing the DTLB only for vector and scalar accesses to memory. A data translation lookaside buffer translates read/write accesses to data in the memory. In a system that perform scalar and vector memory data accesses, the DTLB would be used for those memory accesses. Kolichtchak does not explicitly disclose using scalar and vector memory accesses, however, one of ordinary skill in the art would have been motivated to use Kolichtchak 's teachings [buffer overflow detection/protection] in a system that performs vector and scalar memory accesses, wherein the DTLB would only be used for those accesses, for the desirable purpose of providing accuracy and data protection.

Conclusion

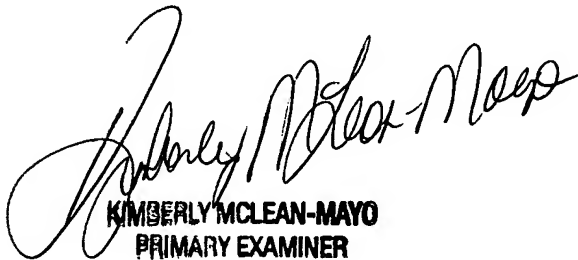
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly N. McLean-Mayo whose telephone number is 571-272-4194. The examiner can normally be reached on Mon (10-4), Tues, Thu (10-2), Fri (10-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2187

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KNM



KIMBERLY MCLEAN-MAYO
PRIMARY EXAMINER

Kimberly N. McLean-Mayo
Primary Examiner
Art Unit 2187

September 19, 2005